

REMARKS

Claims 10-24 are pending in the present application. The Office Action and cited references have been considered. Favorable reconsideration is respectfully requested.

Claims 10-24 were rejected under 35 U.S.C. §103 as being unpatentable over Lerner (U.S. Patent No. 6,104,638) in view of Sorenson (U.S. Patent No. 6,539,402). This rejection is respectfully traversed for the following reasons.

Claim 10 recites a method for reconstructing administrative data records relating to a nonvolatile memory that can be written in units of sectors and erased in units of blocks. The administrative data records are stored in an internal volatile flag memory of an assigned memory controller. The method comprises the steps of setting up, in one or more memory blocks of the *nonvolatile memory*, a contiguous reconstruction table for administrative memory data (RKT) and continually updating the reconstruction table in the *nonvolatile memory with administrative data records* relating to all write and erase operations in the internal volatile flag memory. The step of continually updating comprises recording all information with which the administrative data records of the internal volatile flag memory of the memory controller can be completely reconstructed during a restart after a power failure. The method further comprises starting a reconstruction when a predefined fill level of the reconstruction table (RKT) is reached, to create a defined initial state of the administrative data records in the internal volatile flag memory and in the reconstruction table (RKT), recording the start of the reconstruction as a last entry (OE) in the reconstruction table, and recording a completion entry (FE) into the reconstruction

table, every time the reconstruction was successful. This is not taught, disclosed or made obvious by the prior art of record.

As discussed in the previous response, Larner describes a processor system with a RAM and a non-volatile memory, which is arranged in individually erasable segments, also called blocks. The patent relates to a method to synchronize the values of administrative data words (parameters) in the RAM with previously updated data words which were continuously written to at least two reserved segments of the non-volatile memory. At the beginning of a segment, a special ID with a counter value is written, and the end of the relevant data entries is found by an entry that has the value of an erased memory location. The synchronizing is done by reading all relevant entries and overwriting the corresponding memory location in the RAM until an empty (erased) entry is found. As the first segment is filled up, the second segment is filled with current data words from RAM and the first segment is erased and filled with the value FFFFhex. The next updating is done in the second segment until this is filled up again. Then the segments are swapped again.

Applicant's application also relates to a method to update memory locations in RAM from a reconstruction table in the non-volatile memory. One difference between the claimed invention and Larner lies in the method for the reconstruction of the table and which types of entries for which the method is utilized. Further, in Larner, there is no reorganization process to bring the administrative data into a defined initial state. Larner only describes a reconstruction process to synchronize the values in the RAM and in the reconstruction table to the same current values. The administrative data of Larner do not

have a defined initial state. They tend to become larger and larger. The claimed invention anticipates initial states of the data, such as initial values in allocation tables for memory addresses. The reorganization process brings the data into defined initial states which correspond to a new memory. Such a reorganization is marked with special entries in the reconstruction table. This is different than the end-of-table (FFFFhex). Both methods have such an end-of-table value behind the last written entry. Lerner does not use a reorganization (reconstruction) and so there is no start-of reorganization marker (OE). Claim 10 also includes recording a completion marker for the successful reorganization (FE). Both markers are not taught or suggest in Lerner.

The Office cites Sorenson as allegedly disclosing the claimed markers. Applicant respectfully disagrees. Sorenson describes a method of restoring the data records of a database, which is backed up on a magnetic tape. The described method is very much dependent on the characteristics and requirements of storing database records on magnetic tape. The method of Sorenson differs from the present application in that it deals with backing up of the records and the transaction states of a user database, and not with reconstructing administrative data of a memory system. In the present application, the user data is not involved.

The audit blocks 34 of Sorenson contain the data records which are used to restore the database. *See, e.g.*, Fig. 3, col. 5:53-56. They do not comprise the PSAVE-RECORDs, which are the entry points for the backup process. *See*, col. 7:7-9; col. 8:2-8. In the present application, the entries for start of reconstruction (OE) and completion (FE) are part of the contiguous reconstruction table (RKT) in which the entries for the reconstruction of the administration data are stored.

In the Office Action, the Examiner asserts that the last P-SAVE stored correspond to Applicant's claims step of recording a completion entry into the reconstruction table every time the reconstruction was successful. Applicant disagrees. The P-SAVE is a periodic save of the records of open transactions. Col. 3: 18-19. It does not relate to a completion entry that reflects when a reconstruction was successful, as recited in claim 10.

Further, Applicant respectfully submits that one of ordinary skill in the art would not have found it to be obvious at the time the invention was made to combine the teachings of Lerner and Sorenson. Sorenson teaches about backing up a database on a magnetic tape, *i.e.*, a sequential storage medium. This would not have been considered by someone who is designing a method to reconstruct administrative data of a controller in a flash memory system. Moreover, even if the teachings of Sorenson is considered, it would not lead one of ordinary skill to the present invention, as the structures of the records on the tape and the tables in the memory blocks are very different.

For at least these reasons, Applicant respectfully submits that claim 10 is patentable over the prior art of record whether taken alone or in combination as proposed in the Office Action. Further, Applicant further submits that claims 11-24 are patentable at least for the reasons discussed above with respect to claim 10.

In view of the above amendment and remarks, Applicant respectfully requests reconsideration withdrawal of the outstanding rejections of record. Applicant submits that the application is in condition for allowance and early notice to the effect is most earnestly solicited.

If the Examiner has any questions, he is invited to contact the undersigned at 202-628-5197.

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Respectfully submitted,

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